

What is claimed is:

1. An optical multilayer comprising a polymeric substrate having a non-zero out-of plane birefringence and an amorphous polymeric overlayer that comprises an amorphous polymer having a Tg value above 160°C and having the sign of its out-of-plane birefringence opposite to that of the polymeric substrate so as to provide a total out-of-plane phase retardation of said optical multilayer of between -30nm and 30nm for wavelengths of light between 400 and 700nm.
2. An optical multilayer according to claim 1, wherein the out-of-plane birefringence of said polymeric substrate is negative and the out-of-plane birefringence of said amorphous polymeric overlayer is positive.
3. An optical multilayer according to claim 2, wherein the out-of-plane birefringence of said amorphous polymeric overlayer is more positive than 0.005 at a wavelength 550nm.
4. An optical multilayer according to claim 1, wherein the thickness of said amorphous polymeric overlayer is between 1 and 50µm.
5. An optical multilayer according to claim 4 wherein, the thickness of said amorphous polymeric overlayer is between 5 and 20µm.
6. An optical multilayer according to claim 1 wherein, the transmission of said optical multilayer is higher than 80%.
7. An optical multilayer according to claim 6 wherein, the transmission of said optical multilayer is higher than 90%.
8. An optical multilayer according to claim 2 wherein, said amorphous polymeric overlayer comprises a polymer with negative intrinsic birefringence.

9. An optical multilayer according to claim 8, wherein said polymer has non-visible chromophores off of the polymer backbone.

10. An optical multilayer according to claim 2 wherein, said amorphous polymeric overlayer comprises at least one polymer containing A) poly (4 vinylphenol), B) poly (4 vinylbiphenyl), C) poly (N-vinylcarbazole), D) poly(methylcarboxyphenylmethacrylamide), E) poly[(1-acety lindazol-3-ylcarbonyloxy)ethylene], F) poly(phthalimidoethylene), G) poly(4-(1-hydroxy-1-methylpropyl)styrene), H) poly(2-hydroxymethylstyrene), I) poly(2-dimethylaminocarbonylstyrene), J) poly(2-phenylaminocarbonylstyrene), K) poly(3-(4-biphenyl)styrene), L) poly(4-(4-biphenyl)styrene), M) poly(4-cyanophenyl methacrylate), N) poly(2,6-dichlorostyrene), O) poly(perfluorostyrene), P) poly(2,4-diisopropylstyrene), Q) poly(2,5-diisopropylstyrene), and R) poly(2,4,6-trimethylstyrene).

11. An optical multilayer according to claim 1 wherein, the thickness of said polymer substrate is between 10 μ m and 5mm.

12. An optical multilayer according to claim 1 wherein, the thickness of said polymer substrate is between 30 μ m and 2mm.

13. An optical recording medium comprising recoding layer and optical multilayer according to claim 1 disposed on at least one side of said recording surface.

14. An optical recording medium according to claim 13 wherein, polymeric substrate of said optical multilayer is polycarbonate.

15. A polarizer comprising a polarizing layer and optical multilayer according to claim 1 disposed on at least one surface of said polarizing layer.
16. A polarizer according to claim 15, wherein the polymeric substrate of said optical multilayer is triacetylcellulose.
17. A polarizer according to claim 15, wherein said polarizer is reflective polarizer.
18. A polarizer according to claim 15, wherein said polarizer is transmissive polarizer.
19. A liquid crystal display comprising a liquid crystal cell and at least one polarizer of claim 15.
20. An optical multilayer according to claim 2 wherein, said amorphous polymeric overlayer comprises at least one copolymer made from the following list of monomers: A) 4 vinylphenol, B) 4 vinylbiphenyl, C) N-vinylcarbazole, D) methylcarboxyphenylmethacrylamide, E) (1-acety lindazol-3-ylcarbonyloxy)ethylene, F) phthalimidoethylene, G) 4-(1-hydroxy-1-methylpropyl)styrene, H) 2-hydroxymethylstyrene, I) 2-dimethylaminocarbonylstyrene, J) 2-phenylaminocarbonylstyrene, K) 3-(4-biphenyl)styrene, L) 4-(4-biphenyl)styrene, M) 4-cyanophenyl methacrylate, N) 2,6-dichlorostyrene, O) perfluorostyrene, P) 2,4-diisopropylstyrene, Q) 2,5-diisopropylstyrene, and R) 2,4,6-trimethylstyrene.